

Sequential Ion, UV, and Electron Induced
Chemical Vapor Deposition

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ABSTRACT OF THE DISCLOSURE

Ion-induced, UV-induced, and electron-induced
10 sequential chemical vapor deposition (CVD) processes are
disclosed where an ion flux, a flux of ultra-violet
radiation, or an electron flux, respectively, is used to
induce the chemical reaction in the process. The process
for depositing a thin film on a substrate includes
15 introducing a flow of a first reactant gas in vapor phase
into a process chamber where the gas forms an adsorbed
saturated layer on the substrate and exposing the substrate
to a flux of ions, a flux of ultra-violet radiation, or a
flux of electrons for inducing a chemical reaction of the
20 adsorbed layer of the first reactant gas to form the thin
film. A second reactant gas can be used to form a compound
thin film. The ion-induced, UV-induced, and electron-
induced sequential CVD process of the present invention can
be repeated to form a thin film of the desired thickness.

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